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Indian Standard

SPECIFICATION FOR BOD BOTTLES

(Incorporating Amendment No 1)

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Indian Standard
SPECIFICATION FOR BOD BOTTLES

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(*Continued on page* 2)

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(*Continued from page* 1)

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Indian Standard

SPECIFICATION FOR BOD BOTTLES

0. FOREWORD

0.1 This Indian Standard was adopted by the Indian Standards Institution on 20 March 1979, after the draft finalized by the Laboratory Glassware and Related Apparatus Sectional Committee had been approved by the Chemical Division Council.

0.2 BOD bottles are used for determination of biochemical oxygen demand of water The BOD test gives an indication of the extent of pollution of waste water and is essentially a test carried out under controlled conditions to measure the depletion of dissolved oxygen by living organisms present in it.

0.3 This edition 1.1 incorporates Amendment No 1 (July 2007) Side bar indicates modification of the text as the result of incorporation of the amendment

0.4 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2-1960* The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard

1. SCOPE

1.1 This standard prescribes the requirements and methods of sampling and test for BOD bottles used for carrying out biochemical oxygen demand test on water.

2. TERMINOLOGY

2.1 For the purpose of this standard, the definitions given in IS 1382-1961† shall apply.

3. NOMINAL CAPACITY

3.1 The nominal capacity of the bottles shall be 300 ml

NOTE 1 — The nominal capacity is an indication of the quantity of a liquid which the bottle shall contain when filled to the turn of the shoulder

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*Rules for rounding off numerical values (*revised*)

†Glossary of terms relating to glass industry

NOTE 2 — The design of the bottle shall be such that the total capacity to the base of the neck is approximately 20 percent greater than that to the turn of the shoulder

4. REQUIREMENTS

4.1 Material —- The bottles shall be made of clear glass not having any pronounced tint They shall be as free as possible from visible defects and reasonably free from internal strain.

4.1.1 *Limit of Alkalinity* — When graded according to the method prescribed in IS 2303 (Part 1/Sec 1)-1994*, the glass of BOD bottles shall conform to Class HGB 1

4.1.2 *Thermal Shock Resistance* — When tested in accordance with Method A prescribed in IS 6506-1972† the bottles shall withstand without any damage a thermal shock created by a temperature differential of 65 ± 1°C

4.1.3 *Thermal Resistance* — The bottles shall withstand without damage temperatures encountered during normal conditions of use including sterilization of the empty bottles by autoclaving in saturated steam up to 134°C for one hour

4.2 Pattern — The bottles shall conform to the pattern shown in Fig. 1

4.3 Workmanship and Finish — The bottles shall be regular in shape, symmetrical about the axis and smoothly finished

4.3.1 *Base* — The base of the bottles shall be so constructed that the bottle stands firmly on a flat surface without rocking or spinning

4.3.1.1 The base of the bottle shall have a suitable radius in order to provide a smooth transition between the base and the side

4.3.2 *Side* — The main portion of the side shall be straight and shall be of diameter as shown in Fig 1

4.3.3 *Shoulder* — The shoulder of the bottle shall have a suitable radius in order to provide a smooth transition between the side and the neck of the bottle

4.3.4 *Neck* — The neck of the bottle shall be stoutly constructed and finished with a flare formed to provide water-seal when stoppered and also facilitate pouring without liquid running down the outside of the bottle

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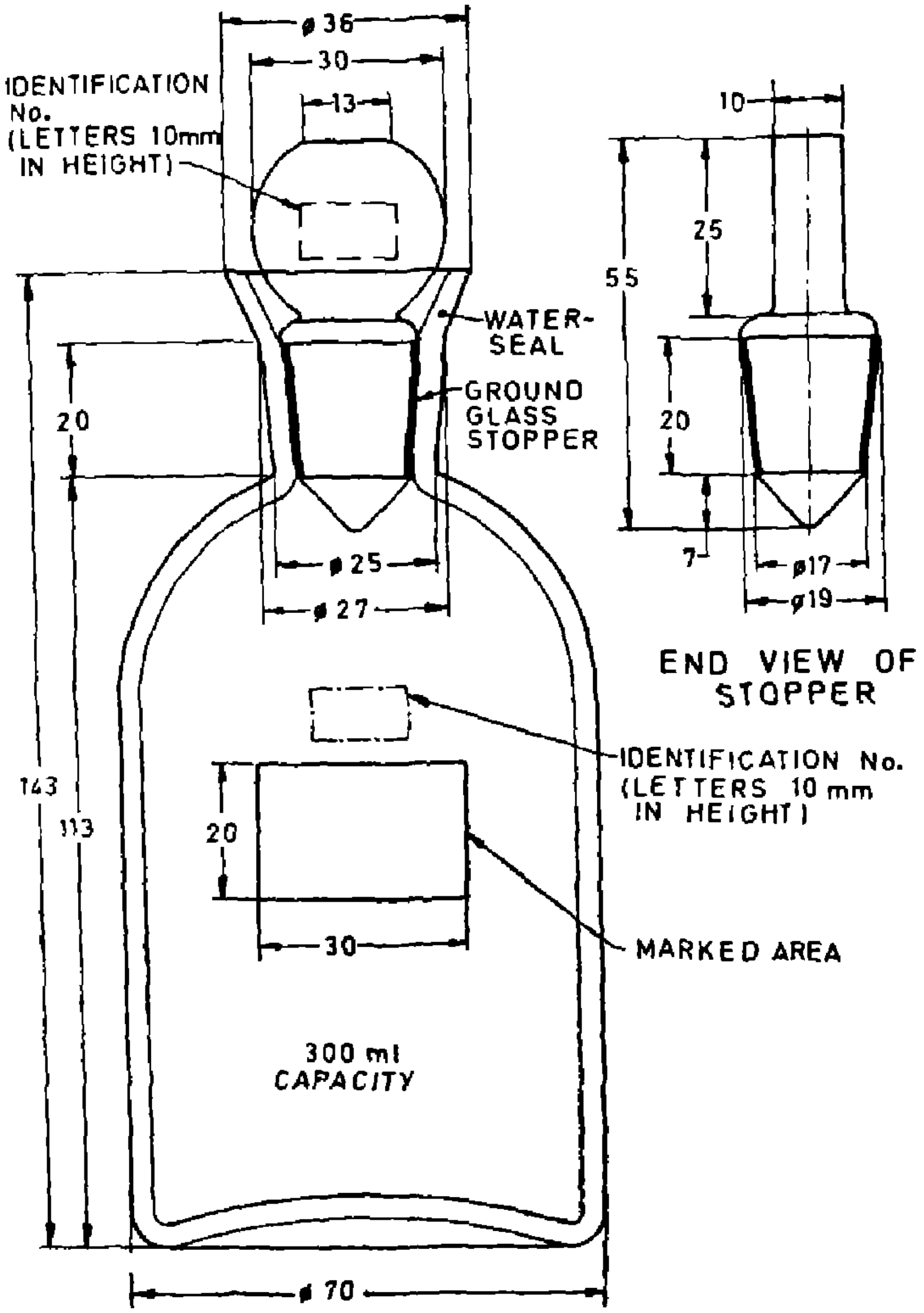
*Grading glass for alkalinity . Part 1 Hydrolytic resistance, Section 1 Hydrolytic resistance of glass grains at 98°C – Method of test and classification (*first revision*)

†Methods for thermal shock tests for glassware



All dimensions in millimetres

FIG. 1 BOD BOTTLE

4.3.4.1 The inside of the neck shall be finished by fine grinding, preferably to the interchangeable conical size 19/17 of IS : 5165-1969*, or alternatively, as shown in Fig. 1.

4.3.4.2 The transition radius to the neck shall be as small as possible compatible with good manufacturing practice

4.3.5 *Stopper* — The stopper shall be of solid-pressed type with up-right grip (*see* Fig 1) and shall be made of the same glass as the bottle It shall be finished by fine grinding preferably to the interchangeable conical joint size 19/17 of IS - 5165-1969*, or alternatively, as shown in Fig. 1

4.4 Dimensions — The recommended dimensions of BOD bottles are given in Fig 1.

4.4.1 *Thickness* — The bottles, except for the neck and bottom, shall have, as far as possible, a uniform wall thickness not less than 1 3 mm The thickness of glass in the neck and bottom shall be not less than 2.5 mm.

5. MARKING AND PACKING

5.1 Marking — BOD bottles shall be marked permanently and legibly with the following.

a) Marked area about 30 mm × 20 mm on the side of the bottle,

b) A number for identification, above the marked area and also on the flat surface of the grip of the stopper (*see* Fig 1), if the stopper is not of the interchangeable type;

c) Nominal capacity in ml, below the marked area, and

d) Name of the manufacturer or his recognized trade-mark, if any. preferably at the base

5.1.1 *BIS Certification Mark*

The bottles may also be marked with the Standard Mark.

5.1.1.1 The use of the Standard Mark is governed by the provision of *Bureau of Indian Standards Act,* 1986 and the Rules and Regulations made thereunder The details of conditions under which the licence for the use of Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.

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*Specification for interchangeable conical ground glass joints

5.2 Packing — BOD bottles shall be packed as agreed to between the purchaser and the supplier

6. SAMPLING

6.1 Representative samples shall be drawn and adjudged as prescribed in IS 4426-1967*.

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*Methods of sampling laboratory glassware and medical glass instruments

INDIAN STANDARDS

ON

LABORATORY GLASSWARE

IS	
878-1975	Graduated measuring cylinders (*first revision*)
915-1975	One-mark volumetric flasks (*first revision*)
1117-1975	One-mark pipettes (*first revision*)
1381 (Part I)-1976	Boiling flasks Part I Flasks with plain neck (*first revision*)
1381 (Part II)-1977	Boiling flasks Part II Flasks with conical sockets (*first revision*)
1388-1959	Reagent bottles
1541-1978	Glass filter funnels (*first revision*)
1571-1960	Glass weighing bottles
1575-1960	Separating funnels
1590-1960	Glass filter flasks
1672-1967	Floating dairy thermometers (*first revision*)
1996-1962	Glass stopcocks
1997-1967	Burrettes (*first revision*)
2180-1973	Solid-stem general purpose glass thermometers (*first revision*)
2618-1963	Test-tubes
2619-1971	Glass beakers (*first revision*)
2620-1963	Distilling flasks
2626-1972	Petridishes (*first revision*)
2627-1963	Glossary of terms relating to liquid-in-glass thermometers
3055 (Part I)-1977	Clinical thermometers Part [Solid-stem type
3104-1965	Density hydrometers
3608-1966	Glass alcoholometers
1161-1967	Nessler cylinders
1162-1967	Graduated pipettes
14215-1967	Methods of sampling laboratory glassware and medical glass instruments
1520-1968	Glass tubes for medical thermometers
1610-1968	Glass tubes for general purpose and reference thermometers
1825-1968	Laboratory and reference thermometers
5165-1969	Interchangeable conical ground glass joints
5681-1970	General meteorological thermometers, liquid-in-glass
5717-1970	Pyknometers
5725-1970	Psychrometers, unventilated (dry and wet bulb hygrometers)
6017-1971	Thermometers for whirling psychrometers
6052-1970	Glass condensers
6128-1971	Desiccators
6274-1971	Method of calibrating liquid-in-glass thermometers
6500-1972	Thermometer for measurement of sea surface temperature
6592-1972	Soil thermometers
7000-1973	General purpose maximum-minimum thermometers
7324-1974	Brix hydrometers
7374-1971	Glass rods and tubing for laboratory glassware
8720-1977	Adjustable range thermometers
8729-1977	Principles of construction and adjustment of volumetric glassware
8787-1977	Principles of design, construction and use of liquid-in-glass thermometers

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